**DOCKET NO.:** 48503-0002-01-US (AHP-99024D1)

**Application No.:** 09/658,734

Office Action Dated: August 3, 2006

PATENT REPLY FILED UNDER EXPEDITED PROCEDURE PURSUANT TO 37 CFR § 1.116

This listing of claims will replace all prior versions, and listings, of claims in the application.

## **Listing of Claims:**

## 1-67. (Canceled)

- 68. (Previously presented) A method for identifying a candidate compound useful for stimulating chromosome synapsis in a cell, comprising:
  - a) contacting MSH5 protein with a test compound;
  - b) determining the meiotic activity of the MSH5 protein in the presence of said test compound;
    - c) selecting a compound that stimulates the meiotic activity of the MSH5 protein; and,
  - d) identifying said selected compound as a candidate compound useful for stimulating chromosome synapsis in a cell.
- 69. (Previously presented) A method for identifying a candidate compound useful for stimulating chromosome synapsis in a cell, comprising:
  - a) contacting a cell expressing an MSH5 gene with a test compound;
  - b) determining the expression of the MSH5 gene or the meiotic activity of MSH5 in the presence of said test compound;
- c) selecting a compound that stimulates the expression of the MSH5 gene or the meiotic activity of MSH5; and,
- d) identifying said selected compound as a candidate compound useful for stimulating chromosome synapsis in a cell.
- 70. (Previously presented) A method for identifying a candidate compound useful for inhibiting chromosome synapsis in a cell, comprising:
  - a) contacting MSH5 protein with a test compound;

**DOCKET NO.:** 48503-0002-01-US (AHP-99024D1)

**Application No.:** 09/658,734

Office Action Dated: August 3, 2006

PATENT REPLY FILED UNDER EXPEDITED PROCEDURE PURSUANT TO 37 CFR § 1.116

- b) determining the activity of the MSH5 protein in the presence of said test compound;
- c) selecting a compound that inhibits the meiotic activity of the MSH5 protein; and,
- d) identifying said selected compound as a candidate compound useful for inhibiting chromosome synapsis in a cell.
- 71. (Previously presented) A method for identifying a candidate compound useful for inhibiting chromosome synapsis in a cell, comprising:
  - a) contacting a cell expressing an MSH5 gene with a test compound;
  - b) determining the expression of the MSH5 gene or the meiotic activity of MSH5 in the presence of said test compound;
    - c) selecting a compound that inhibits the expression of the MSH5 gene or the meiotic activity of MSH5; and,
    - d) identifying said selected compound as a candidate compound useful for inhibiting chromosome synapsis in a cell.